

15 are amended to include the subject matter of prior claim 17, claim 26 is amended to include the subject matter of prior claim 27, claims 2, 17 and 27 are canceled, claims 3, 4, 18, 28 and 29 are amended to revise their dependency, claims 12 and 37 are amended, and new claims 44-57 are added.

The amendments to claims 1, 14, 15 and 26 better define the present invention over the teachings of Doi, as discussed more fully below.

No new matter is added by this Amendment, support for the amendments to claims 1, 14, 15 and 26 being found in the original specification, including at least at original claim 2. Support for the subject matter of newly added claims 44-55 can also be found in the original specification and claims. Specifically, support for new claims 44 and 45 can be found in the original specification at page 2, lines 29-34. Support for new claims 46 and 47 can be found at page 2, lines 18-21. Finally, the original specification at page 5, lines 21-23 describes the embodiment in which the varnish layer is colored as recited in new claims 48-55.

Entry of the amendments is proper under 37 CFR §1.116 since the amendments: (a) place the application in condition for allowance (for the reasons discussed herein); (b) do not raise any new issue requiring further search and/or consideration (since the amendments to claims 1, 14, 15 and 26 merely incorporate a dependent claim limitation therein); and (c) place the application in better form for appeal, should an appeal be necessary. The amendments are necessary and were not earlier presented because they are made in response to arguments raised in the final rejection. Entry of the amendments is thus respectfully requested.

In view of the foregoing amendments and the following remarks, reconsideration of this application is respectfully requested.

I. Rejection Under 35 U.S.C. §102(e)

Claims 1, 6, 9, 10, 24-26, 31, 34, 35 and 41 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by JP 01-20249 to Doi (hereinafter "Doi" for consistency with the identification of this reference by the Patent Office). This rejection is respectfully traversed.

Attached to this Amendment After Final Rejection is an English-language translation of Doi.

Claims 1 and 26 each recite a hot marking method utilizing a multilayer structure comprising a layer of varnish between a backing layer and a decoration layer, the varnish layer being comprised of a varnish being a UV thermal varnish. Doi fails to teach or suggest the use of such a multilayer structure in a hot marking method, in particular failing to teach or suggest that the varnish of the varnish layer is a UV thermal varnish.

A UV thermal varnish is a UV varnish that can be cured at least partially by exposure to heat. Use of this material in the present invention is advantageous as the UV thermal varnish can be pre-cured via heat while keeping the photo-initiators active.

Doi, on the other hand, describes the use of a transfer sheet having a curable protective layer formed from an ionizing radiation-curable resin. See page 4, paragraph 4 of the attached translation. Doi teaches to use such resin since no heat is needed to cure the resin. See page 1, paragraph 5 of the attached translation. In Doi, the resin is pre-cured, or half-cured, by exposing the resin to UV radiation. As a result, after transfer, the resin contains less photo-initiators.

Doi thus fails to teach or suggest the use of a UV thermal varnish as required in claims 1 and 26 of the present application.

With particular respect to new independent claims 44 and 45, these claims each require that the varnish layer be exposed to radiation while a temperature of the varnish is still close to the maximum temperature of the varnish reached when pressure and heat are applied

to the backing layer, the temperature difference between the temperature at exposure to radiation and the maximum temperature being less than 30% of the maximum temperature. In this embodiment, since the temperature of the varnish layer is relatively high at the time of exposure, the varnish layer has a higher activity and thus can be easily cured under UV radiation.

Doi is silent about the temperature of the structure when it is exposed to radiation. Furthermore, Doi mentions that the resin used need not be heated (as was discussed above). As such, Doi cannot anticipate the embodiments recited in claims 44 and 45 of the present application.

With particular respect to new independent claims 46 and 47, these claims each require that the varnish comprise oligomers of low molecular weight. Oligomers of low molecular weight enable curing to be easily initiated since the oligomers have a low reaction inertia. Doi does not disclose or suggest a varnish comprising oligomers of low molecular weight. As such, Doi cannot anticipate the embodiments recited in claims 46 and 47 of the present application.

With particular respect to new independent claims 48 and 49, these claims each require that the structure comprise at least one layer of varnish that is colored. Doi does not disclose or suggest a structure having a layer of varnish that is colored. Thus, Doi cannot anticipate the embodiments recited in claims 48 and 49 of the present application.

Finally, Doi also fails to teach or suggest that a colored varnish layer is yellow so as to imitate gold as required in each of claims 50 and 53. Doi thus further fails to teach or suggest these claims.

For the foregoing reasons, Doi clearly fails to teach, and therefore clearly fails to anticipate, the hot marking method as recited in present claims 1, 26 and 44-49, and claims

dependent therefrom. Reconsideration and withdrawal of this rejection are respectfully requested.

II. Rejections under 35 U.S.C. §103(a)

A. Claims 12 and 37

Claims 12 and 37 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Doi in view of U.S. Patent No. 4,215,170 to Vilaprinyo Oliva (hereinafter "Vilaprinyo Oliva"). This rejection is respectfully traversed.

In this rejection, the Patent Office recognized that Doi does not teach or suggest how a metal design layer may be formed. However, the Patent Office alleged that it would have been obvious from the teachings of Vilaprinyo Oliva to have utilized vacuum metallization for this purpose.

Applicant respectfully submits that even if the teachings of Vilaprinyo Oliva were to have been combined with the teachings of Doi in the manner alleged in the Office Action, the presently claimed invention still would not have been achieved. This is because Vilaprinyo Oliva remedies none of the deficiencies of Doi discussed above. Thus, the combined teachings of Doi and Vilaprinyo Oliva would not have led one of ordinary skill in the art to the hot marking method of independent claims 1, 26 and 44-49.

For at least the foregoing reasons, Applicant respectfully submits that neither Doi nor Vilaprinyo Oliva, whether taken singly or in combination, teach or suggest claims 12 and 37. Reconsideration and withdrawal of this rejection are respectfully requested.

B. Doi In View of Reed

Claims 2, 4, 5, 7, 8, 11, 13, 21, 27, 29, 30, 32, 33, 36, 38 and 39 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Doi in view of U.S. Patent No. 4,294,641 to Reed (hereinafter "Reed"). This rejection is respectfully traversed.

The Patent Office turned to the teachings of Reed as allegedly suggesting the chemical make-up of a resin layer curable by UV radiation. It was further alleged that Reed suggested substitution of the metallic decorated layer of Doi with a printed-in decoration layer.

Applicant respectfully submits that Doi and Reed are directed to different inventions that operate in substantially different manners, and thus one of ordinary skill in the art would not have been led to have combined the teachings of the references as alleged in the Office Action.

As discussed above, Doi teaches to have the curable resin half cured, and then fully cured after transfer of the layer onto the article. Reed, on the other hand, teaches a method in which the transfer layer is only cured after transfer on the article.

Doi aims to avoid having to have a layer of resin that melts under excess heat prior to transfer. Having such a resin layer is indicated to affect the metallic luster of a metal layer. See the translation of Doi at page 2, paragraph 3. To address this problem, Doi teaches to use a resin that is half cured so that the resin has a high heat resistance and cannot melt. See page 3, paragraph 3 of the translation.

Reed, to the contrary, teaches a method in which the resin layer is transferred in a liquid phase, and not in a solid phase as in Doi. See Reed at column 3, lines 45-50. Furthermore, unlike Doi, Reed does not teach or suggest transferring a metal layer.

Doi and Reed thus teach distinctly different methods, and different materials for use in such methods. One of ordinary skill in the art would have found no motivation in either reference to have combined the references in the manner set forth in the Office Action. Doi and Reed thus would not have led one of ordinary skill in the art to the presently claimed invention.

For at least the foregoing reasons, reconsideration and withdrawal of this rejection are respectfully requested.

C. Doi In View of Reed and Further In View of Hekal

Claims 3 and 28 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Doi in view or Reed, and further in view of U.S. Patent No. 5,581,978 to Hekal et al. (hereinafter "Hekal"). This rejection is respectfully traversed.

The Patent Office turned to the teachings of Hekal as allegedly suggesting the use of a UV or thermally curable resin based on a cationic system.

This rejection is clearly improper in that none of the references teach or suggest the hindsight picking and choosing combination made by the Patent Office. Further, nothing in Hekal would have led of ordinary skill in the art to have combined the teachings of Doi and Reed.

For at least the foregoing reasons, Applicant respectfully submits that none of Doi, Reed or Hekal, whether taken singly or in combination, teach or suggest claims 3 and 28. Reconsideration and withdrawal of this rejection are respectfully requested.

D. Doi In View of Reed, and Further In View of Howard

Claims 22 and 40 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Doi in view of Reed, and further in view of U.S. Patent No. 4,133,723 to Howard (hereinafter "Howard"). This rejection is respectfully traversed.

The Patent Office further turned to the teachings of Howard as allegedly suggesting a transfer layer comprised of low molecular weight oligomers having a molecular weight in the range of from about 800 to about 2000.

Applicant respectfully submits that Howard, like Hekal discussed immediately above, also would not have led of ordinary skill in the art to have combined the teachings of Doi and Reed. Applicant thus respectfully submits that none of Doi, Reed or Howard teach or suggest claims 22 and 40. Reconsideration and withdrawal of this rejection are respectfully requested.

E. Doi in View of Kamen and Davis

Claims 42 and 43 were newly rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Doi in view of U.S. Patent No. 5,391,247 (Kamen) and U.S. Patent No. 1,124,869 (Davis). This rejection is respectfully traversed.

Applicant respectfully submits that even if the teachings of Kamen and Davis were to have been combined with the teachings of Doi in the manner alleged in the Office Action, the presently claimed invention still would not have been achieved. This is because Kamen and Davis remedy none of the deficiencies of Doi discussed above. Thus, the combined teachings of Doi with Kamen and Davis would not have led one of ordinary skill in the art to the hot marking method of independent claims 1, 26 and 44-49.

For at least the foregoing reasons, Applicant respectfully submits that none of Doi, Kamen and Davis, whether taken singly or in combination, teach or suggest claims 42 and 43. Reconsideration and withdrawal of this rejection are respectfully requested.

III. Rejoinder

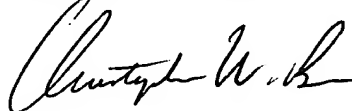
By way of a Restriction Requirement, claims 14-16 and 18-20 have been withdrawn from consideration. In view of the fact that the method recited in claims 1 and 26 includes all of the structural limitations of the multilayer structure of non-elected claim 14, Applicant respectfully submits that the non-elected claims should be rejoined with the application and allowed along with the elected claims.

IV. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1, 3-16, 18-22, 24-26 and 28-57 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachment:

English-language translation of Doi

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